

Remarks

Claims 1-32 are pending in this application. Claims 14-30 are withdrawn from consideration. Reconsideration of claims 1-13, 31 and 32 is respectfully requested.

Applicants gratefully acknowledge that the Office Action indicates that claims 3, 6, and 8-12 recite allowable subject matter. However, based on the following Remarks, applicants respectfully submit that all claims are in condition for allowance.

The December 10, 2003 Office Action did not address claims 31 and 32, which were added by the amendment filed September 4, 2003 in response to the first Office Action mailed June 26, 2003. The Office Action Summary listed these claims as "withdrawn", however, the claims were never subject to restriction and were not withdrawn by Applicants or by the Examiner. The Detailed Action made no mention of claims 31 and 32, and Applicants infer that their omission was an inadvertent oversight. Furthermore, Applicants submit that the amendments to claims 1, 2 and 13 made in the September 4 amendment were made to correct informalities such as antecedent basis, and did not change the scope of the claims over the scope the claims would have been afforded, as filed. Accordingly, the issuance of a Final Rejection in this case was improper.

Therefore, Applicants respectfully request that a new, non-final Office Action be issued which addresses claims 31 and 32, or that the application be allowed, based on the Remarks below.

In response to the substantive rejections made in the December 10, 2003 Office Action, the Office Action rejects claims 1, 2, 4, 5, 7 and 13 under 35 U.S.C. §103(a) over Gooch et al. (U.S. Patent 6,521,477 B1) in view of Spooner et al. (U.S. Patent Application No. 2002/0081816 A1). This rejection is respectfully traversed.

Applicants submit that neither Gooch nor Spooner discloses or suggests "dicing the MEMS wafer to separate individual dies from the MEMS wafer" and "then connecting said die onto said second wafer," as recited in claims 1 and 13, because neither Gooch nor Spooner discloses separating the individual devices before attaching them to the second wafer.

Gooch discloses a method for vacuum packaging an array of MEMS devices fabricated on a device wafer, by attaching the device wafer to a lid wafer in an evacuation chamber, while heating the wafers to activate the adhesive between the wafers. The dicing operation in Gooch only takes

place after the device wafer has been bonded to the lid wafer. As set forth in col. 11, lines 14-22, "Device wafer 10 is then brought into alignment with lid wafer 30 followed by contacting the two wafers in a vacuum environment to produce vacuum packaged MEMS devices 12. After the completed assembly is cooled, probe access channels are opened above package bonding pads 86 to allow testing of vacuum packaged MEMS devices using bulk IC testing procedures. After all dies on the completed assembly are tested, the completed assembly is diced into individual dies."

Spooner discloses a method "wherein the MEMS wafer, with wafer cap in place, is diced into a plurality of MEMS dies." (See paragraph [0002].) The specification of the patent makes it very clear that the individual dies have not yet been separated from the device wafer, when they are attached to the cap wafer. For example, paragraph [0024] sets forth that the method "mounts, upon the MEMS wafer, a wafer cap to produce a laminated MEMS wafer...and dices the laminated MEMS wafer into a plurality of MEMS dies." In fact, the specification teaches away from the present invention, by teaching to encapsulate the MEMS devices in a protective wafer before dicing them. According to paragraph [0023], "This facilitates the minimization of the effects of handling of the MEMS die during assembly processing and gives protection to the MEMS die during any processing, handling, or transportation." Finally, the surface referred to in the Office Action as indicating a wafer is reference number 21, which is identified in the specification as a "package" not a "wafer". One of ordinary skill in the art would not interpret a "package" as a "wafer", as a "package" does not imply a flat surface, as does "wafer". Indeed, the package surface shown in Figs. 9, 10, 16 and 17 is not flat, and hence is clearly not a "wafer". Thus, the only second wafer disclosed in Spooner is the protective cap wafer. Accordingly, both Gooch and Spooner disclose attaching the MEMS device to the protective wafer before dicing the combined MEMS wafer and protective wafer.

Therefore, neither Gooch nor Spooner discloses each and every element of claim 1. Claims 1-13 depend from claim 1, and are patentable at least for the reasons set forth above, as well as for the additional features they recite. Applicants respectfully request that the rejection of claims 1, 2, 4, 5, 7 and 13 be withdrawn.

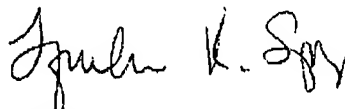
Claim 31 depends from claim 2, and claim 32 depends from claim 13. Therefore, claims 31 and 32 are patentable for at least the reasons set forth above, as well as for the additional features they recite.

Applicants therefore respectfully request that a new, non-final Office Action be issued, addressing claims 31 and 32 and the traversal of the rejection of claims 1, 2, 4, 5, 7 and 13 under 35 U.S.C. §103(a) as outlined above, or that the application be allowed.

Based on the foregoing remarks, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-13, 31 and 32 are respectfully solicited.

Should the Examiner believe that anything further is desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative, at the telephone number set forth below.

Respectfully submitted,



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